

Date: Fri, 1 Apr 94 23:07:49 PST
From: Info-Hams Mailing List and Newsgroup <info-hams@ucsd.edu>
Errors-To: Info-Hams-Errors@UCSD.Edu
Reply-To: Info-Hams@UCSD.Edu
Precedence: Bulk
Subject: Info-Hams Digest V94 #364
To: Info-Hams

Info-Hams Digest Fri, 1 Apr 94 Volume 94 : Issue 364

Today's Topics:

 Hamfest List - Mid Atlantic States
 How phasing SSB Exciters Work (Was: RF and AF speech processors)
 passive satellites
 Repeater Voter Questions
 RF and AF speech processors. Was: FT-990 vs TS-850
 Time to lighten up.....

Send Replies or notes for publication to: <Info-Hams@UCSD.Edu>
Send subscription requests to: <Info-Hams-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Info-Hams Digest are available
(by FTP only) from UCSD.Edu in directory "mailarchives/info-hams".

We trust that readers are intelligent enough to realize that all text
herein consists of personal comments and does not represent the official
policies or positions of any party. Your mileage may vary. So there.

Date: 31 Mar 1994 19:43:38 -0500
From: ihnp4.ucsd.edu!usc!howland.reston.ans.net!news.intercon.com!news1.digex.net!
access.digex.net!not-for-mail@network.ucsd.edu
Subject: Hamfest List - Mid Atlantic States
To: info-hams@ucsd.edu

MID-ATLANTIC HAMFEST LISTING

March 31, 1994

The following is a listing of known hamfests in the MD/NJ/PA/VA area.
I will update this list as necessary. Please send any additions or
corrections to me at cps@access.digex.net so that others may benefit.

Thanks,

Chris Smolinski, N3JLY

April 10, 1994:

HAMCOMP '94 8AM-1PM, \$5 adm, \$12 tailgating, \$20 table.
Trenton State College, Rt 31, Ewing Township.
Talk-In 146.67-, 146.52 simplex.
Contact Don Write AA2F (609) 737-1723.

May 15, 1994:

HAMFEST '94, 7AM-2PM, \$5 adm, \$8 tailgating, \$12 tables.
Middletown Grange Fairgrounds, Penns Park Rd, Wrightstown, PA
Talk-In 147.09/R, 146.52 simplex
Contact: George Brechman N3HBT (215) 443-5656

May 21, 1994:

Cherryville Hamfest, 8AM-2PM, \$6 admission, \$10 tailgating, \$15 tables
Warren County Farmers Fairgrounds, Rt 518 North, Harmony, NJ I78-exit 3.
Contact Keith Burt, KF5FK, (908) 788-4080 before 10PM
VE Test Session Contact Marty Grozinski, NS2K, (908) 806-6944 before 9PM
Talk-In 147.375+ & 146.820-

May 22, 1994:

Great Hagerstown Hamfest, 8AM-3:30PM, \$5 adm, \$5 tailgating, \$20 tables
Hagerstown Jr College Rec Center, Exit 32B from I-70, right at Edgewood Rd
Contact Page Pyne or Fred Bailey (301) 714-0688
VE Exams 9AM contact Pat KQ8E at (304) 289-3576
Talk-In 146.34+

June 5, 1994:

Ole Virginia Hamfest, 8AM-3PM
Prince William County Fairgrounds, Manassas, VA

June 19, 1994:

Father's Day Hamfest, 8AM-3PM, \$5 adm, \$5 tailgating
Walkersville Fire Co, Walkersville, MD, rt 15 to rt 26 to rt 194
Frederick Amateur Radio Club, PO Box 1260, Frederick, MD 21702
Talk-In 146.52, 147.06+, 448.425-

July 10, 1994:

Maryland Hamfest, 8AM-?, tailgating opens at 6AM
Timonium Fairgrounds, York Rd, I-695 to I-83 to Timonium Rd
BRATS, PO Box 5915, Baltimore, MD 21208
VE Exams 10AM, Pre-registration required
Talk-In 147.03+, 224.96-

July 16, 1994:

Red Rose Repeater Assn, 9AM-3PM \$5 adm, \$5 tailgating, \$20 tables
McCaskey High School, Reservoir & N Franklin Streets, Lancaster, PA
Red Rose Repeater Assn, PO Box 8316, Lancaster, PA 17604
Talk-In 147.015+

August 7, 1994:

Southern Patuxent Hamfest, 7AM-2PM, \$5 adm, \$5 tailgating, \$25 tables
Prince George County Equestrian Center, Upper Marlboro, MD
Rt 301/ Rt 4, exit 11-A (Rt 4 Pennsylvania Ave) from DC Beltway I-495
Contact: Southern Patuxent ARC, PO Box 399, St Leonard, MD 20685
(410) 586-2177
Talk-In 147.15

Hamfest 94, 8AM-?, \$5 adm, \$3 tailgating
Bucks County Drive In Theater, rt 611, 6mi N of Pa Turnpike exit 27
Mid Atlantic Radio Club, PO Box 352, Villanova, PA 19085
Talk-In 147.06, 145.13

August 14, 1994:

SARA Carroll County Hamfest, 8AM-?, \$5 adm, \$5 tailgating, \$8 tables
Carroll County Ag Center, Smith Ave, Westminster, MD
Contact: Alan Parker, KS3L, (410) 859-1475
SARA Hamfest, 607 Brentwood Rd, Linthicum, MD 21090
Talk-In 146.52, 224.68, 224.64

Hamfest & Computerfest, 8AM-?, \$4 adm, \$7 tailgating, \$25 tables
Career Institute of Technology, Easton, PA
Delaware-Lehigh ARC, RR 4 Greystone Bldg, Nazareth, PA 18064-9211
(610) 820-9110
Talk-In 146.70

September 9 & 10, 1994:

Queen Wilhelmina State Park, Mena, Arkansas. \$2 park entrance fee, \$5 adm.
Contact Gerald Wallis, N5KKD, (501) 524-3094

September 17&18, 1994:

Virginia Beach Hamfest \$6 adm, \$15 tailgating, \$30 tables, \$125 booths
Virginia BEach Pavillion
Manny Steiner, K4DOR, 3512 Olympia Lane, Virginia Beach, VA 23452
(804) HAM-FEST

September 18, 1994

South Jersey Radio Assn, 8AM-3PM, \$5 admission, \$5 tailgating
Pennsauken High School Parking Lot, near US rt 130 / NJ rt 73
Contact Diane Nafis, N2LCQ, (609) 227-6281, (609) 228-8088
VEC Test Session registration at 9:30 AM
Talk-In 145.290-

October 30, 1994:

Mason Dixon Hamfest 8AM-?, \$5 adm, \$5 tailgating, \$15 tables
Carroll County Ag Center, Westminster, MD
Mason Dixon Hamfest, PO Box 763, Hanover, PA 17331
VE exams \$5.60, 9AM, reg 8AM, Page Evans NE3P, (717) 359-7610
Talk-In 145.410-

Date: Fri, 1 Apr 1994 03:21:38 GMT
From: lerc.nasa.gov!magnus.acs.ohio-state.edu!csn!col.hp.com!srngenprp!
alanb@purdue.edu
Subject: How phasing SSB Exciters Work (Was: RF and AF speech processors)
To: info-hams@ucsd.edu

Tom Bruhns (tomb@lsid.hp.com) wrote:

: But what if it was a design goal to come up with a quadrature phase
: network with flat frequency response and linear phase? Would that be
: possible? I think so, and I offer comments below in support of that
: idea. If I don't get to it, maybe someone else can check out the
: suggestion at the end to see if it really can work.

: ...

: 10. It should be possible to find a pair of MFD filters with overlapped
: passbands (either two bandpass filters or a lowpass and a bandpass)
: which have equal $d(\phi)/df$ and a 90 (or 45--see paragraph 11) degree
: phase difference between the channels in the shared passband.
: Actually finding such a pair is the exercise remaining to be done!
: Any volunteers?

Tom: Your logic seems impeccable. The only possible fly in the ointment
I can see is that it may not be possible to find the required band-pass
filters such that the overlap region covers a 10:1 frequency range
(300 Hz - 3 kHz). It may have to be done at an "IF" frequency so the
band-pass filters cover a smaller percentage bandwidth.

: As a simple feasibility check, I asked a curvefitter to fit to a couple
: linear phase ramps with constant amplitude, offset by 90 degrees, in the
: range from 300Hz to 3.5kHz, and it didn't have any trouble getting
: within a tenth dB and under a degree, with about 14 poles and 14 zeros
: for each. None of the poles was particularly high Q: max about 8.

Did the curvefitter use an equation in the form of a ratio of
polynomials? If so, then all that's required is to derive the poles
and zeros and we're practically done!

I seem to recall that a conventional phase-shift network can be implemented
with around 4 all-pass filters (per output), each of which has a pole-zero
pair on the real axis (Q of 1/2). Each filter can be built with a single
op-amp, one capacitor and 3 resistors. Tom's idea is basically to use more
all-pass filters and to allow them to have higher Q.

As a further complication, one could intentionally design the phase-shift
network to have slightly non-linear phase to compensate for the unflat
group delay of the audio filter.

Of course, all this assumes that achieving linear phase (as opposed
to a small, smoothly-varying phase error) is worth the extra work.
Sounds like making the phase response "perfect" would more than
triple the network complexity. (10 to 14 high-Q poles versus 4
low-Q poles.)

AL N1AL

Date: Thu, 31 Mar 1994 15:49:59 GMT

From: ihnp4.ucsd.edu!agate!howland.reston.ans.net!pipex!sunic!EU.net!julienas!

Hi there,

Date: 1 Apr 1994 05:06:43 -0600
From: ihnp4.ucsd.edu!dog.ee.lbl.gov!agate!howland.reston.ans.net!cs.utexas.edu!
swrinde!news.uh.edu!uuneo.neosoft.com!sugar.NeoSoft.COM!not-for-

mail@network.ucsd.edu
Subject: Repeater Voter Questions
To: info-hams@ucsd.edu

In article <2nf4iu\$dn6@news.udel.edu>,
Dave Dabell <dave@diusys.cms.udel.edu> wrote:

- >
- > What voter should we use?
- > I've heard good things about Doug Hall products.
- > Are there others that should be considered?

If you're going to buy one, the Hall voter is the best value. I've used it in a commercial application and it's a fine product. Works great and I'd highly recommend it. You can sometimes find surplus Motorola and GE voters on the used market. They're a bit tricky to use compared to the Hall, but all work basically the same.

- >
- > Anyone have suggestions on how to preserve audio
- > fidelity over the UHF link?
- > One thought I had was to route remote receiver
- > detector audio directly to the link xmit modulator.
- > This would bypass receiver de-emphasis and link xmit
- > pre-emphasis circuitry. Comments?

You have the right idea. One other comment--make sure you feed the audio into the link transmitter past the audio limiter. This will make sure the audio doesn't get clipped by the link transmitter. Since you have control over the deviation of the links, you can get away with no limiter. The audio can be made flat from below 100 Hz to above 3 kHz with normal narrow-band FM equipment. I usually feed my audio into the PL input on the transmitter. This is usually after the limiter and pre-emphasis.

- >
- > What is the best way to match the remote receiver
- > audio to the main receiver?
- > I assume that audio level and frequency response
- > characteristics should be closely matched to make
- > the voting process transparent.

This is the most important aspect of a voted system. If the receivers don't match, the voter will tend to favor one receiver over another. The Hall voter has adjustments which allow the user to "fool" it into thinking one receiver is noisier than another, but this won't make up for the audio being close to start with. I've never used equalization, but it's pretty easy to get it right by just taking discriminator (non de-emphasized) audio from the receiver and feeding the link transmitter past the audio processing.

>

>I'd also welcome any general advice or experiences folks
>have had with remotes that might be of help to us.

What you'll find most impressive is that a voted system will cover better than the sum of the receiver sites. Because you have diversity reception, much of the mobile flutter heard on single site receiver systems will disappear. I think you'll be pretty happy with it. The only down side is the additional maintenance of the link equipment and voter.

Good luck.

--

Jim Reese, WD5IYT | "Reality is for those with no imagination."
jreese@sugar.neosoft.com | --Jim McClellan

Date: Fri, 1 Apr 1994 08:22:10 GMT
From: lerc.nasa.gov!magnus.acs.ohio-state.edu!csn!col.hp.com!news.dtc.hp.com!
hplextra!hplb!hpwin052!hpqmoea!dstock@purdue.edu
Subject: RF and AF speech processors. Was: FT-990 vs TS-850
To: info-hams@ucsd.edu

Alan Bloom (alanb@sr.hp.com) wrote:

: Crystal filters designed for receive filtering are not optimum
: for a transmitter SSB generator.

: AL N1AL

Yippee ! Thanks, Alan. That one little fact is always a shock to everyone I explain it to.

Think of two expensive-grade Japanese rigs in QSO. The transmitting rig will have an SSB generator with crystal IF filter, an RF clipper (Tx IF would be a better adjective) and another SSB crystal filter. For economy, the radio will use SSB filters designed for Rx selectivity as the same filters are switched into the receive path. Serious Dxers will, of course, have changed them for especially narrow ones. At the receiving end, the posh radio on receive will have two SSB crystal filters in use, one in its 9-ish MHz IF, and one in its 455 kHz IF.

The sound that reaches the listener's ears can have passed through FOUR receiving-spec crystal filters, some or all of which could be special extra-narrow ones.

We are talking of up to 32 poles of crystal filtering, as four sets of 8-pole 2.4kHz wide sections. Just look in Zverev to see the group delay and ringing characteristics.

Those filters are important in the receiver, but quite inappropriate in the transmitter, we could halve the damage done to the sound quality.

My thoughts for a home-brew ultimate rig are running towards phasing SSB generation, IF speech processing and then a >3kHz wide crystal filter as a post-clipper clean-up. Carrier and opposite sideband suppression will be the sum of the performance of the phasing system and the crystal filter, so neither need produce spectacular performance.

Experiments have shown a good, clean, controlled output spectrum, limited by power amp intermod products, and the audio quality was outstanding.

Here in the 1990s I'm daydreaming about DSP'ing a similar scheme, Hilbert-transform based SSB generation, arithmetic clipping, and a digital SSB filter feeding a DAC producing a low IF to make a cheap and excellent SSB generator/speech processor.

Multiband audio processing looks attractive, but it is the peak of the sum of all the bands that is what has to be controlled, so I think this may not be the best technique. There is, of course no technique that is RIGHT, but some are better than others....

Amusingly, some of the fancy DSP based speech processor techniques turn out to be "RF processors" in digital form.

Cheers,

David

(It's refreshing to have a decent technical debate going in place of the code wars and hand-held questions...)

Date: Fri, 01 Apr 94 08:23:32 GMT
From: netcomsv!netcomsv!skyld!janguis@decwrl.dec.com
Subject: Time to lighten up.....
To: info-hams@ucsd.edu

Time to interject some humor here. I spotted this in the Yucks digest and just knew it belonged here....

I was toying with using search and replace to insert Jeff Herman's name in

this, but figured that the rest of you would figure it out on your own.

73 es GE from Jeff

Date: Thu, 10 Mar 1994 16:05:21 -0600

From: skip@cy.cs.olemiss.edu (Skip Sauls) (by way of werner@cs.utexas.edu (Werner Uhrig))

Subject: [yucky stuff] Zsolt Szabo is DEAD!!!

To: Gene Spafford <spaf>

JOHNS HOPKINS (ANP) - Zsolt Szabo, the self-proclaimed genius who has gained notoriety for his absurd net postings, was found dead today at his terminal. Cause of death is unknown, but police detectives believe that he may have suffered from an overdose of EGO, a new and highly addictive narcotic. An autopsy has been ordered, but there is little chance of finding anything as the brain is usually consumed. Amazingly, the drug allows the person to continue to live, although admittedly in a severely reduced capacity, for up to 2 days after the last traces of the brain have degenerated.

Police have been perusing the last few articles posted by the late Mr. Szabo on a computer bulletin board, referred to only as "that advocacy thing" by the detectives. A search of his apartment also turned up several photographs of a fashion model that he has apparently been stalking for the past few months. The only other evidence that the press was allowed access to was a series of words drawn in human feces on the wall of the deceased's apartment. Most of the words suggest an anal-fixation and are not printable here, but there were several that appear to be code words, including "730", "mbyte", and others. Police speculate that the former was the time that the deceased finally expired and that the latter was in reference to some sort of sado-masochistic sexual implement.

Although very little information can be found about EGO, there is increasing speculation that it may have been around longer than some suspect. Each canister of EGO, which is a gas, has the letters "JY" engraved on it, along with the picture of what appears to be some sort of bird, perhaps a falcon. Unlike some narcotic gases, EGO is not an inhalant, at least in the traditional sense. The nozzle is acutally inserted into the anus and the gas is release into the intestines for absorption. This admitttedly bizzare method may be the cause of the intense anal-fixation exhibited by users in the final stages of the addiction.

Amateur: WA6FWI@WA6FWI.#SOCA.CA.USA.NOAM	"You have a flair for adding
Internet: jangus@skyld.grendel.com	a fanciful dimension to any
US Mail: PO Box 4425 Carson, CA 90749	story."
Phone: 1 (310) 324-6080	Peking Noodle Co.

Date: Fri, 1 Apr 1994 06:31:44 GMT
From: ihnp4.ucsd.edu!usc!howland.reston.ans.net!vixen.cso.uiuc.edu!
news.uoregon.edu!engineer.mrg.uswest.com!cherokee!walter!thumper!
cotton@network.ucsd.edu
To: info-hams@ucsd.edu

References <slayCnEC6z.KDF@netcom.com>, <2nca7d\$hf2@network.ucsd.edu>,
<dsharpCnHu0x.IDp@netcom.com>cheroke
Reply-To : cotton@thumper.bellcore.com (Chase Cotton)
Subject : QRMers ... (was Re: Obscenity on ham bands)

hey folks, just saw this on the net ... sounds neat!
a cure for the garbage mouths too?

Chase

Chase Cotton cotton@thumper.bellcore.com

+++++

=====

PRODUCT PRESS RELEASE	NET POLICE INC.
APRIL, 1994	DISTRIBUTE ALL FEEDS

Are you like me? You sit down for a few hours to listen to a ham net and just relax. You tune up on 40 or 80 meters, everything is going great, not a thunderstorm in earshot, and then just as you begin writing down the phone number of the fellow selling the mint Collins tx/rx pair for \$200, the numbers fade and are replaced by a 2000+ watt "belchhhhhhhhhhh", "burppppppp", or "yawnnnnnnnnnn". The repeat is similarly stomped. You only get the area code. You curse under your breath. Hoping for a "recheck", you listen carefully only to be deafened by a 40 over 9 carrier and then you begin to moan and cry softly. Later you toss and turn all night dreaming about a QRM-seeking missile.

Well, soon your prayers will be answered ...

You've heard about "voice printing" and recently the FCC's use of "transmitter signatures", and now YOU will have some

help fighting the most fearsome of all amateur radio monsters, the dreaded "QRMer" ...

NET POLICE INC. is happy to announce the introduction of a new high-tech tool which will become the QRMer's worst nightmare ...

THE BELCHprinter (tm)

The BELCHprinter (tm) is NET POLICE INC.'s triple threat answer to this age old problem. Using modern DSP and RISC microprocessor technology, the BELCHprinter unit is connected to the audio and IF feeds of your receiver. When the console unit's trigger is depressed, the BELCHprinter takes an IF and audio sample and extracts a unique numeric print of the QRMer and his transmitter (when using the optional high accuracy clock unit). The number is compared with other existing prints and duplicates are merged. Then a unique numeric ID is shown in the BELCHprinter's display. The unit stores 2048 prints in nonvolatile memory. With the optional RS-232 interface and software package, the unit can be combined with your PC to form a complete QRMer identification system with almost unlimited storage. To help further ID the QRMer, the BELCHprinter can be instructed to sample the signals of a known transmitter/operator and thus unknown QRMer prints can be identified. The built-in database in the BELCHprinter software can of course hold call and name information.

A follow-on packet radio product is expected to be ready soon which will allow the exchange of QRMer print records between BELCHprinter owners so national and global databases can be constructed. NET POLICE INC. will also be serving as a repository for print records and will be distributing a CD version of the entire BELCHprinter Database (tm) as soon as sufficient prints have been collected.

Hang in there. You'll get that Collins or Kenwood yet ...

And coming soon ...

BELCHsquelch (tm)

The first production BELCHprinter units are currently

undergoing alpha tests around the country and orders will be accepted shortly. Prices have yet to be determined, but should be in line with other modern amateur radio accessories. You may contact NET POLICE INC. for further information on the product and associated accessories.

Discounts are being considered for sales to recognized net control stations as a courtesy to the amateur radio community.

model#	description	MSRP
BLCH1	BELCHprinter unit, manual, patch cords	TBD
BLCH1a	RS-232 control, software for IBM compatible PC	TBD
BLCH1b	high accuracy clock unit for BLCH1	TBD
BLCHcd	CDRom print database (requires BLCH1a)	TBD

Distributor inquiries are encouraged.

NET POLICE INC. call 1-800-BAD-HAMS
2611 Indiana Ave., Suite 390A
Chicago, IL 60019

Date: Thu, 31 Mar 1994 20:07:12 +0000
From: ihnp4.ucsd.edu!usc!howland.reston.ans.net!pipex!demon!llondel.demon.co.uk!
dave@network.ucsd.edu
To: info-hams@ucsd.edu

References <CnG3Jt.Htw@srgenprp.sr.hp.com>, <CnI0t1.DJ@seastar.org>, <1994Mar31.140529.6602@arrl.org>
Subject : Re: How phasing SSB Exciters Work (Was: RF and AF speech pr

Why not use a Weaver (Third Method) exciter? It is easy to generate a couple of 1800Hz carriers which are 90 degrees out of phase, and fairly easy to generate a couple of 10.7MHz carriers which are 90 degrees out of phase, and the rest is reasonably straightforward without any expensive bits. SBL1 mixers are cheap, so the fact that you need four shouldn't be prohibitive.

Dave

```
*****
* G4WRW @ GB7WRW.#41.GBR.EU AX25      * Start at the beginning. Go on      *
* dave@llondel.demon.co.uk Internet * until the end. Then stop.          *
* g4wrw@g4wrw.ampr.org Amprnet * (the king to the white rabbit) *
*****
```

Date: Fri, 1 Apr 1994 00:47:31 GMT
From: ihnp4.ucsd.edu!swrinde!sgiblab!wetware!spunky.RedBrick.COM!psinntp!psinntp!
arrrl.org!zlau@network.ucsd.edu
To: info-hams@ucsd.edu

References <1994Mar23.162557.7558@arrrl.org>, <2msav8\$8f9@vixen.cso.uiuc.edu>,
<1994Mar25.135851.5580@arrrl.org>
Subject : Re: RF and AF speech processors. Was: FT-990 vs TS-850

Zack Lau (KH6CP) (zlau@arrrl.org) wrote:

: Ignacy Misztal (ignacy@ux2.cso.uiuc.edu) wrote:

: :

: : Cheap AF processors use AF clippers. DSP-based processors are not only
: : novelties now, but they are more expensive to build than RF processors.
: : Why AF clippers are worse than RF (IF) clippers? Consider a 500Hz
: : tone test. With AF processor you will get extra 1000,1500,2000,2500
: : Hz tones. With RF (SSB and DSB) processor 500Hz will be the only
: : output. Please note that some older rigs have "implicit" RF
: : processors. For instance, SWAN 500 has 7360, a beam deflection tube,
: : as a DSB modulator. By clipping peaks, it acts with the following XTAL
: : filter as a DSP processor.

: :

: If you clip an ideal DSB waveform (1 kHz modulation), aren't there

Oops, this should be 500 Hz modulation, not 1 KHz modulation in the
parenthesis.

: two tones spaced 1 kHz apart that could generate IMD products at
: 1.5 kHz and 1.5 kHz (receiver output)? What if you had a significant
: amount of carrier leakthrough that was cleaned up by the crystal
: filter? Couldn't this give you extra tones at 1, 1.5, 2, and 2.5
: kHz (at the receiver)?

What this means is that having two crystal filters, one before and
after the clipper, results in less distortion on your transmitted
signal. The extra filter can also be useful on receive, since IF
amplifiers typically reintroduce noise on the unwanted sideband
detected by most product detectors. It isn't difficult to obtain
matched sets of crystal filters, if you have enough \$\$\$.

--

Zack Lau KH6CP/1 2 way QRP WAS
 8 States on 10 GHz
Internet: zlau@arrrl.org 10 grids on 2304 MHz

End of Info-Hams Digest V94 #364
